

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathon Scherer on 3/26/2009.

The application has been amended as follows:

In the specification:

- a. Between lines 3 and 4, please insert the heading **--FIELD OF THE INVENTION--** centered in the column
- b. In lines 10 and 11, please delete the phrase ", being illustrated in Figure 1" and amend the paragraph of lines 10 and 11 such that it is part of the preceding paragraph of lines 7-9.
- c. Between lines 11 and 12, please insert the heading **--SUMMARY OF THE INVENTION--** centered in the column.
- d. Between lines 22 and 23, please insert the heading **--BRIEF DESCRIPTION OF THE DRAWINGS--** centered in the column, after that insert the paragraph --FIG. 1 is a representation of the process to obtain titanium concentrates with high contents of  $\text{TiO}_2$  and low contents of radionuclide elements from anatase mechanical concentrates according to the present

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invention.--, and after that please insert the heading --**DETAILED DESCRIPTION OF THE INVENTION**-- centered in the column.

In the claims:

- a. Please cancel claims 3, 7, 8, and 10.
- b. In claim 1 at the beginning of the second paragraph, please insert --(a)-- before the word "calcinating"
- c. In claim 1 at the beginning of the third paragraph, please insert --(b)-- before the word "conducting"
- d. In claim 1 at the end of the third paragraph, please insert --having a first magnetic fraction-- after the word "product"
- e. In claim 1 at the beginning of the fourth paragraph, please insert --(c)-- before the word "conducting"
- f. In claim 1 in the fourth paragraph, please insert --first-- after the phrase "thereby extracting the"
- g. In claim 1 at the beginning of the fifth paragraph, please insert --(d)-- before the word "conducting"
- h. In claim 1 in the fifth paragraph, please delete the word "the" after "thereby extracting" and replace it with the phrase --a second--
- i. In claim 1 at the beginning of the sixth paragraph, please insert --(e)-- before the word "conducting"
- j. In claim 1 at the beginning of the seventh paragraph, please insert --(f)-- before the word "conducting"

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- k. In claim 1 at the beginning of the eighth paragraph, please insert --(g)-- before the word “drying”
- l. In claim 1 at the beginning of the ninth paragraph, please insert --(h)-- before the word “oxidizing”
- m. In claim 1 at the ninth paragraph, please replace the term "ore" with -- product--
- n. In claim 1 at the beginning of the tenth paragraph, please insert --(i)-- before the word “quenching”
- o. In claim 1 at the beginning of the eleventh paragraph, please insert --(j)-- before the word “conducting”
- p. In claim 1 at the eleventh paragraph, please delete the phrase “action of” after the phrase “vitreous phase through”
- q. In claim 1 at the beginning of the twelfth paragraph, please insert --(k)-- before the word “filtering”
- r. In claim 1 at the beginning of the thirteenth paragraph, please insert --(l)-- before the word “drying”
- s. In claim 1 at the beginning of the fourteenth paragraph, please insert -- (m)-- before the word “conducting”
- t. In claim 1 at the fourteenth paragraph, please insert the word —magnetic— after the phrase “thereby separating an iron containing, radionuclide rich”

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- u. In claim 1 at the fourteenth paragraph, please insert the phrase --from a non-magnetic fraction-- after the phrase “thereby separating an iron containing, radionuclide rich fraction”
- v. In claim 1 at the fourteenth paragraph, please insert the phrase --iron containing, radionuclide rich—after the phrase “the non-magnetic fraction becoming the end product concentrate and the”
- w. In claim 2, please replace the phrase “reduction step” with --the reduction in step (b)--
- x. In claim 4, please replace the phrase “separation step” with --separation in step (d)--
- y. In claim 5, please replace the phrase “first hydrochloric acid leaching step” with --hydrochloric acid leaching in step (e)--
- z. In claim 5, please add the phrase --w/w HCl-- after the term “25%”
- aa. In claim 6, please replace the phrase “oxidation step” with the phrase --oxidation in step (h)--
- bb. In claim 6, please replace the phrase “anatase mechanical concentrates fed into” with --material fed to--
- cc. In claim 9, please replace the phrase “second hydrochloric acid leaching step” with --hydrochloric acid leaching in step (j)--
- dd. In claim 11, please replace the phrase “magnetic separation step of the second dried product” with --magnetic separation of the second dried product in step (m)--

***Allowable Subject Matter***

2. Claims 1-2, 4-6, 9, 11 are allowed.
3. The following is an examiner's statement of reasons for allowance: none of the prior art of record teaches all of the claimed limitations of instant claim 1, namely the steps of calcinating ore, reducing the calcinated product, low intensity magnetic separation followed by high intensity magnetic separation, hydrochloric acid leaching, filtration, drying, oxidizing in the presence of amorphous silica and sodium fluoride, quenching in water, hydrochloric acid leaching of the quenched product in the presence of NaF or HF, filtering, drying, and dry high-intensity magnetic separation. Although many of the individual steps are taught in the prior art, there is nothing on the record to show that it would be obvious to one of ordinary skill in the art to combine each individual step in the order and under the conditions specified by instant claim 1. The closest prior art is US 5578109 to Harris et al. Harris discloses a process for removing radionuclides from titaniferous material which comprises reduction, hydrochloric acid leaching in the presence of NaF, physical separation, aqueous oxidation, and additional acid leaching. Harris does not disclose the presence of amorphous silica and sodium fluoride in the oxidation step, nor does Harris disclose the repeated magnetic separations, nor does Harris disclose all of the numerous time, temperature, and concentration ranges claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Walck whose telephone number is (571)270-5905. The examiner can normally be reached on Monday-Friday 9 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/  
Supervisory Patent Examiner, Art  
Unit 1793

/Brian Walck/  
Examiner, Art Unit 1793